

CLAIMS:

We claim:

1. 1. In a digital communications network, a method comprising:
  2. monitoring a plurality of links to determine state changes of the links;
  3. enforcing an IMA-ID check when an insufficient links state is reached;
  4. relaxing the IMA-ID check when all the links are in an error state; and
  5. re-enforcing an IMA-ID check when at least one link of the plurality of links
  6. recovers from an error state .
1. 2. The method of claim 1, further comprising enforcing the IMA-ID check if a near end IMA-ID does not match a far end IMA-ID.
1. 3. In a digital communications network, a method comprising:
  2. restarting an existing IMA group, comprising:
    3. learning an IMA group ID of a far end IMA group;
    4. making the IMA group ID persistent;
    5. using only links matching the IMA group ID; and
    6. placing non-matching links in an unusable state.
1. 4. The method of claim 3, wherein learning an IMA group ID further comprises:
  2. resynchronizing the IMA group; and

4 extracting the IMA group ID from a first connected link.

1 5. The method of claim 3, wherein making the IMA group ID persistent  
2 further comprises storing a new IMA group ID in memory.

1 6. The method of claim 3, wherein using only matching links further  
2 comprises screening IMA links having an IMA group ID that are involved in  
3 unintentional IMA group restarts for a matching stored IMA group ID.

4 7. The method of claim 3, further comprising looping back all links.

1 8. The method of claim 3, further comprising marking all links as unusable.

1 9. In a digital communications network, a system comprising:  
2 means for monitoring a plurality of links to determine state changes of the  
3 links;  
4 means for enforcing an IMA-ID check when an insufficient links state is  
5 reached;  
6 means for relaxing the IMA-ID check when all the links are in an error  
7 state; and  
8 means for re-enforcing an IMA-ID check when at least one link of the  
9 plurality of links recovers from an error state .

1           10. The system of claim 9, further comprising means for enforcing the IMA-ID  
2           check if a near end IMA-ID does not match a far end IMA-ID.

1           11. In a digital communications network, a system comprising:  
2           means for restarting an existing IMA group, comprising  
3           means for learning an IMA group ID of a far end IMA group;  
4           means for making the IMA group ID persistent;  
5           means for using only links matching the IMA group ID; and  
6           means for placing non-matching links in an unusable state.

1           12. The system of claim 11, wherein learning an IMA group ID further  
2           comprises:  
3           means for resynchronizing the IMA group; and  
4           means for extracting the IMA group ID from a first connected link.

1           13. The system of claim 11, wherein making the IMA group ID persistent  
2           further comprises storing a new IMA group ID in memory.

1           14. The system of claim 11, wherein using only matching links further  
2           comprises screening IMA links having an IMA group ID that are involved in  
3           unintentional IMA group restarts for a matching stored IMA group ID.

1           15. The system of claim 11, further comprising looping back all links.

1           16. The system of claim 11, further comprising marking all links as unusable.

1           17. A computer-readable medium having stored thereon a plurality of  
2           instructions, said plurality of instructions when executed by a computer, cause  
3           said computer to perform the method comprising:

4           monitoring a plurality of links to determine state changes of the links;  
5           enforcing an IMA-ID check when an insufficient links state is reached;  
6           relaxing the IMA-ID check when all the links are in an error state; and  
7           re-enforcing an IMA-ID check when at least one link of the plurality of links  
8           recovers from an error state .

1           18. The computer-readable medium of claim 17 having stored thereon  
2           additional instructions, said additional instructions when executed by a computer,  
3           cause said computer to further perform enforcing the IMA-ID check if a near end  
4           IMA-ID does not match a far end IMA-ID.

1           19. In a digital communications network, a method comprising:  
2           restarting an existing IMA group, comprising  
3           learning an IMA group ID of a far end IMA group;  
4           making the IMA group ID persistent;  
5           using only links matching the IMA group ID; and  
6           placing non-matching links in an unusable state.

1       20. The computer-readable medium of claim 19 having stored thereon  
2       additional instructions, said additional instructions when executed by a computer  
3       for learning an IMA group ID, cause said computer to further perform:  
4            resynchronizing the IMA group; and  
5            extracting the IMA group ID from a first connected link.

1       21. The computer-readable medium of claim 19 having stored thereon  
2       additional instructions, said additional instructions when executed by a computer  
3       for making the IMA group ID persistent, cause said computer to further perform  
4       storing a new IMA group ID in memory.

1       22. The computer-readable medium of claim 19 having stored thereon  
2       additional instructions, said additional instructions when executed by a computer  
3       for using only matching links, cause said computer to further perform screening  
4       IMA links having an IMA group ID that are involved in unintentional IMA group  
5       restarts for a matching stored IMA group ID.

1       23. The computer-readable medium of claim 19 having stored thereon  
2       additional instructions, said additional instructions when executed by a computer,  
3       cause said computer to further perform looping back all links.

1           24. The computer-readable medium of claim 19 having stored thereon  
2           additional instructions, said additional instructions when executed by a computer,  
3           cause said computer to further perform marking all links as unusable.

1  
2           25. A line card for use in a switch, comprising:  
3           a central processing unit (CPU);  
4           a system controller connected to the central processing unit;  
5           random access memory (RAM) connected to the system controller; and  
6           a group restarter connected to the CPU, controller, and RAM wherein the  
7           group restarter restarts an IMA group.

1  
2           26. The switch of claim 25 wherein the processor monitors a plurality of links  
3           to determine state changes of the links and enforces an IMA-ID check when an  
insufficient links state is reached.

1  
2           27. The switch of claim 26 wherein the processor relaxes the IMA-ID check  
3           when all the links are in an error state and re-enforces an IMA-ID check  
when at least one link of the plurality of links recovers from an error state.

1  
2           28. The switch of claim 27, wherein the processor enforces the IMA-ID check  
if a near end IMA-ID does not match a far end IMA-ID.